*BY ORDER OF THE COMMANDER*
*AEROSPACE MAINTENANCE AND*
*REGENERATION CENTER*

***AMARC INSTRUCTION 21-120***

***30 DECEMBER 1999***

***Maintenance***

# *OIL ANALYSIS PROGRAM*

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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OPR: AMARC/LAAO (M. Flanagan)
Certified by: AMARC/LAA (D. Omness)
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This instruction implements Air Force Policy Directive (AFPD) 21-1, *Managing Aerospace Equipment Maintenance*. It establishes the responsibilities and procedures for AMARC participation in the Joint Oil Analysis Program (JOAP) in accordance with (IAW) AFI 21-124, *Air Force Oil Analysis Program (OAP);* AFI 21-131, *Joint Oil Analysis Program (JOAP);* Davis Monthan AFB Instruction 21-109, *Oil Analysis Program,* and the support agreement between 162d Fighter Wing (FW), Tucson Air National Guard (162 ANG) and AMARC. It applies to the Aircraft Management (LA), Logistics (LG) and Plans and Programs (XP) Directorates.

***SUMMARY OF CHANGES.*** Updates the office symbols, references, publication style and format. Deletes the requirement for the engine manager to post oil analysis results. All paragraph numbers were changed. Other paragraph changes are indicated with an * (asterisk). Addresses using different types of work control documents. Adds the 162d Air National Guard (ANG) for testing oil samples. Requires the AMARC Form 40, **Engine/CSD Oil Analysis,** for samples sent to the 162d ANG.

**1. RESPONSIBILITIES.** The Process In (LAI), Process Out (LAO), and Specialist Support (LAS) Divisions will each appoint an OAP monitor in writing to perform the functions required by this program. The letter will be updated annually or as needed, will include grade, name, duty and fax phone numbers and will be sent to the 355th Equipment Maintenance Squadron, Fabrication Flight, Non-Destructive Inspection (NDI) Unit (355EMS/LGMFN), JOAP laboratory (lab) and the 162d ANG materials laboratory (lab). The OAP monitors will:

1.1. Assist LA and LG personnel to resolve problems and questions.

1.2. Ensure compliance and implementation of this program.

1.3. Train personnel in the methods of obtaining oil samples to ensure sampling is performed IAW TO 33-1-37, *Joint Oil Analysis Program Laboratory Manuals, Volumes I* through *IV*.

**2. PROCEDURES.**

2.1. Special (Red Cap/Red Tagged) OAP samples will be taken from all aircraft with the following conditions:

2.1.1. Those arriving with engine, transmission or gearbox malfunctions.

2.1.2. At any indication of oil wetted system component malfunction, excessive oil use, oil fluctuation or low pressure.

2.1.3. Those processing out for flyaway following the final engine run and after each functional check flight (FCF).

2.1.4. Arrivals in project categories "XS" (Inviolate Storage), "XT" (Military Assistance Program [MAP]), or "XV" (Storage High Probability of Withdrawal) or the aircraft that have low-time engines identified for removal to be sent to operational organizations. Exception: Aircraft being processed for 4000 type *no-save engine*.

2.2. During aircraft process-in, Receiving Branch (LAIR) will:

2.2.1. Take two OAP samples after engine shut down IAW TO 33-1-37 for all aircraft arriving at AMARC and those criteria in paragraph 2.1. One sample is sent to the 355 EMS/LGMFN, JOAP lab for wear metals testing and one sample is sent to the 162d ANG lab for testing total acid number (TAN), water and particulate contamination.

2.2.2. Prepare the DD Form 2026, **Oil Analysis Request,** for the sample destined for the 355EMS/LGMFN, JOAP lab. All the entries are self-explanatory except the following:

**Table 1. Mandatory DD Form 2026 Entries.**

| BLOCK | MANDATORY ENTRY |
|---|---|
| OIL ANALYSIS LABORATORY | 355 EMS/LGMFN |
| OPERATING ACTIVITY | Aerospace Maintenance & Regeneration Center<br>Davis-Monthan AFB AZ 85707-4334 |

2.2.3. Prepare an AMARC Form 40, **Engine/CSD Oil Analysis,** for the sample destined for the 162d ANG lab.

2.2.4. Date and Production Acceptance Certification (PAC) stamp the AFMC Form 958/959, **Work Control Document** or other work control document when the samples are taken.

2.2.5. Give the OAP samples, the DD Forms 2026 and the AMARC Forms 40 to the LAI OAP monitor.

2.3. During processing out of aircraft, Aircraft Maintenance Branches (LAOB and LAOD) will:

2.3.1. Take an OAP sample following the Green run, the final engine run and after all FCFs and prepare one copy of the DD Form 2026.

2.3.2. Follow the procedures in paragraphs 2.2.1 through 2.2.5 but give the sample and form to the LAO OAP monitor.

2.4. The Propulsion Branch (LASE) personnel, during test cell operations, will:

2.4.1. Perform an initial OAP sample run and a final (acceptance) OAP sample run.

2.4.2. Follow the procedures in paragraphs 2.2.1 through 2.2.5 but give the sample and form to the LAS OAP monitor.

2.5. The LAI, LAO and LAS OAP monitors will:

2.5.1. Ensure the DD Form 2026 and AMARC Form 40 are correct and complete.

2.5.2. Ensure daily pickup of the DD Form 2026 or AMARC Form 40 and oil samples by Equipment Services Division, Transportation Branch (LAET), Taxi.

2.5.3. When notified by 355EMS/LGMFN, JOAP lab or the 162d ANG lab of any discrepancies found during analysis:

2.5.3.1. LAO - Ensure the information is entered in the project workbook's work control document by the crew chief during processing out and a copy of the test results are entered in the aircraft records.

2.5.3.2. LAI - Notify the Process In Support Branch (LAIO), Planner to enter the discrepancy in the project workbook's work control document.

2.5.3.3. LAS - Notify the crew chief to enter the discrepancy into the workbook's work control document and place a copy of the test results in the engine records.

***NOTE:***

No corrective action will be taken with discrepancies until aircraft withdrawal, engine removal or otherwise directed.

2.6. The LAET, Taxi will pick up the OAP samples and forms daily from LAI, LAO and LAS OAP monitors and deliver the sample with the DD Form 2026 to the 355EMS/LGMFN, JOAP lab. The samples for the 162d ANG lab must have the AMARC Form 40 attached.

2.7. The 162d ANG will e-mail the test results to the generating work center and to Production Control Division, Policy and Technical Services Branch (LAAO), Aircraft Records. The results are faxed to the work center if the e-mail is not available.

2.8. The work center OAP monitor will:

2.8.1. Send a copy of any faxed results to LAAO, Aircraft Records.

2.8.2. Tag units (i.e., engines, constant speed drives [CSD]) exceeding the OAP sample metal wear, water, TAN and other contaminate limits, and annotate the date if the sample originated with LAI during process-in.

2.9. LAAO, Aircraft Records will file the test results with the appropriate aircraft or engine record file.

PATRICK J. MULLOY
Director, Aircraft Management